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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,921	03/10/2004	Mei-Yuh Hwang	M61-12-0599	3268
27366 7590 02/15/2008 WESTMAN CHAMPLIN (MICROSOFT CORPORATION) SUITE 1400 900 SECOND AVENUE SOUTH MINNEAPOLIS, MN 55402-3319			EXAMINER ABEBE, DANIEL DEMELASH	
			ART UNIT 2626	PAPER NUMBER
			MAIL DATE 02/15/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/796,921

Applicant(s)

HWANG, MEI-YUH

Examiner

Daniel D. Abebe

Art Unit

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 7-21 is/are rejected.
- 7) ☒ Claim(s) 4-6 and 24-27 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
- Paper No(s)/Mail Date 8-8-05, 1-31-05

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date. ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 8-13-15 and 17-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Heckerman et al. (6,263,308).

As to claims 1 and 8, Heckerman teaches a method and apparatus for improving acoustic model of speech signal through text, comprising the steps of :

Performing speech recognition operation on speech input using an initial acoustic model to generate phonetic representation for the input utterance using speech recognition;

Receiving text corresponding to the recognized utterance and through a phonetic transcriber, generating phonetic transcription for the text;

Aligning the text and the speech phonetic transcription; and

Selecting a phonetic representation for the word by comparing the phonetic representation generated from the speech with the text based phonetic transcription (abstract; Figs.5-7; Col.13, line 55-Col.15, line 30)

According to Heckerman The phonetic transcriber receives the text corresponding to each correctly recognized word and generates phonetic transcriptions of the word and supplies it to the phonetic transcription representation selector.

On the other hand, the speech based phonetic recognizer processes the word and generates there from a representation for the word. The representations of the recognized words are then supplied to the phonetic representation selector.

The phonetic representation selector compares the phonetic representation generated from the audio corresponding to each word to the phonetic representation of the word produced by the text phonetic transcriber and selects one with reasonable match between the phonetic representation generated from the audio and the phonetic representations of the word generated from the transcriber where the output is selected to be the phonetic representation that is supplied to the acoustic model trainer as training data

As to claims 2-3, Heckerman teaches recognizing the speech input in order to generate the phonetic representations (Col.16, lines 55-60)

With respect to claims 9 and 18, Heckerman teaches where the acoustic models of the phonetic representation that is selected according to the correct text phonetic representation is supplied to the acoustic model trainer where the trainer receives segments of the initial acoustic model and performs training operation to update the initial acoustic model accordingly. Heckerman explained where the acoustic model is then retrained using the correctly recognized text and corresponding audio segments from the audio data transforming the initial acoustic model into a speaker trained acoustic model (abstract; Fig.9)

With regard to claims 10-12, Heckerman teaches where the phonetic description of the text and speech are aligned in order to compare their similarity or distance and where the text description represents alternatives pronouncement of the word...

With respect to claims 13-15 and 17, Heckerman teaches an acoustic and a language model where the acoustic model from the stored acoustic models and the language model are used to provide separate probabilities, which when combined together provide a joint probability that is used to determine the overall probability given an input acoustic sequence, that the sequence includes a particular hypothesized word or string of words (Fig.3, Col.8, lines 45-60)..

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heckerman. As to claim 7, Heckerman teaches where the text representations are obtained through speech recognition.

Official notice is taken that letter to sound rule is well known in the art of speech recognition and would have been obvious in Heckerman teaching in order to determine the correct pronunciation of the word as taught by Heckerman.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 16,19-23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heckerman as applied above, and further in view of Bartosik et al. (6,725,194).

As to claims 16 and 19, Heckerman doesn't explicitly teach the acoustic symbol adjusting process as claimed. Bartoski teaches a text based speech recognition model adjusting means for adjusting the acoustic model of speech recognition system using the corresponding text description, where the text and the speech are structured on a path like structure (Fig.4; Col.8, lines 25-35; Col.9, line 62-Col.10, line 60)). it would have been obvious to one of ordinary skill in the art to combine the two arts for the purpose efficiently adjusting the acoustic model.

As to claims 20-23, Bartoski teaches where a penalty score is computed for each path in the correct text and recognized text structure that compares correct text that takes the user pronunciation into consideration and the recognized text (Col.10, line 60-Col.11, line 12).

Allowable Subject Matter

Claims 4-6 and 24-27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

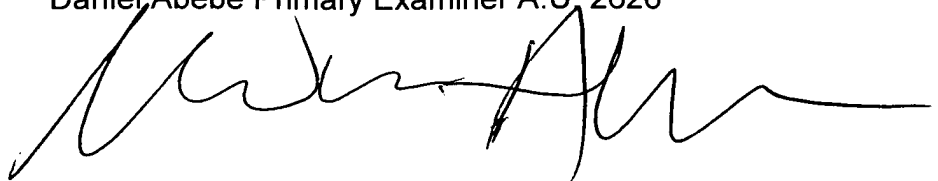
The following is a statement of reasons for the indication of allowable subject matter: the claims are allowable, because the prior arts of record do not teach where recognizing the speech signal comprises identifying a sequence of syllable like units from the speech signal as recited in the claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel D. Abebe whose telephone number is 571-272-7615. The examiner can normally be reached on monday-friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 571-272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Daniel Abebe Primary Examiner A.U. 2626

A handwritten signature in black ink, appearing to read 'Daniel Abebe', is written over the printed name.

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